REMARKS

These remarks and the accompanying amendments are responsive to the Office Action dated July 13, 2006 (hereinafter the "Office Action"), having a shorted statutory period for response that expires today, October 13, 2006. At the time of the last examination, Claims 1, 2, 4-8, 18-20, 22, 23, 33-37, 47, 49, 51 and 53-84 were pending. A new Claim 75 is added. Accordingly, upon entry of this amendment, Claims 1, 2, 4-8, 18-20, 22, 23, 33-37, 47, 49, 51 and 53-85 will be pending for further consideration.

As a preliminary matter, section 7 of the Office Action allows Claims 5, 19, 54-61 and 70-77. Claims 5, 19, 54 and 70-77 are unamended in this response, and thus should still be allowable. Claims 55-61 are amended to be in multiple dependent form depending on both Claim 53 and Claim 54. To the extent that Claims 55-61 depend from Claim 54, they should thus remain allowable. The following remarks will thus only address how Claims 55-61 are allowable as dependent upon Claim 53. Furthermore, the following remarks will also address the rejected Claims 1, 2, 4, 6-8, 18, 20, 22, 23, 33-37, 47, 49, 51, 53, 62-69 and 78-83 as well.

Sections 3 and 4 of the Office Action reject Claims 1, 8, 18, 23, 33, 37, 47, 49 and 51 as being indefinite under 35 U.S.C. 112, second paragraph. Each of these claims have been amended to corrected the antecedent basis issue pointed out by the Office Action.

Sections 5 and 6 of the Office Action reject Claims 1, 2, 4, 6-8, 18, 20, 22, 23, 33-37, 47, 49, 51, 53, 62-69 and 78-84 under 35 U.S.C. 103(a) as being unpatentable over United States patent number 6,647,003 issued to Abeta et al. (the patent hereinafter referred to as "Abeta") in view of United States patent number 5,881,056 issued to Huang et al. (the patent hereinafter referred to as "Huang").

Applicants respectfully submit that Abeta does not qualify as prior art with respect to any of the pending claims of the present patent application. In order to use a reference as prior art under 35 U.S.C. 103, it must first qualify as prior art under the provisions of 35 U.S.C. 102. The most salient provisions of 35 U.S.C. 102 with respect to Abeta are 35 U.S.C. 102(b), (a), and (e), which will now be discussed in that order.

With respect to 35 U.S.C. 102(b) and (a), Abeta did not issue until November 11, 2003, whereas the present patent application was filed on December 01, 2000. Accordingly, Abeta does not qualify as prior art under either 35 U.S.C. 102(b) and (a).

Accordingly, the only remaining possible provision of 35 U.S.C. 102 under which the present application might otherwise qualify as prior art is 35 U.S.C. 102(e). However, it is not necessary to evaluate Abeta to see if it qualifies as a 35 U.S.C. 102(e) reference. Under the provisions of 35 U.S.C. 103(c), the undersigned makes a statement of common ownership as follows:

STATEMENT OF COMMON OWNERSHIP

I, Adrian Lee (the undersigned), do hereby declare that the present application (i.e., United States patent application serial number 09/701,705) (hereinafter "the present application") and United States patent number 6,647,003 (hereinafter "the Abeta patent") were, at the time of the invention of the present application, owned by NTT DoCoMo, Inc., the assignee of the present application. NTT DoCoMo, Inc. was previous known as "NTT Mobile Communications Network, Inc.", the listed assignee of the Abeta patent.

Accordingly, the 35 U.S.C. 103(a) rejection of the claims should be withdrawn.

The Applicants do note, however, that the Abeta patent has some related publication in its chain of priority. For instance, accompanying this response is an Information Disclosure Statement citing PCT patent application publication number WO99/27672, which was published on June 3, 1999 (hereinafter, the "PCT Abeta reference"), and European patent application publication number EP0955741, which was published on November 10, 1999 (hereinafter, the "EP Abeta reference"). However, these references also would not qualify as prior art with respect to Claims 53-84 for the reasons the follow.

35 U.S.C. 102(b) indicates that a reference qualifies as prior art if its publication date is more than one year prior to the "effective filing date" of the present application. For 102(b) purposes, the effective filing date of the present application will be the PCT patent application date (March 30, 2000). Since the publication dates of the PCT Abeta reference (June 9, 1999) and the EP Abeta reference (November 10, 1999) are not prior to one year of this date (before March 30, 1999), neither the PCT Abeta reference nor the EP Abeta reference would qualify as prior art under 35 U.S.C. 102(b).

As for 35 U.S.C. 102(a), a printed publication may qualify as prior art if it was published prior to the "date of invention" of the present application. The "date of invention" is the presumed to be the date the U.S. patent application was filed, but that date may be moved earlier to show an earlier date of invention. The present application claims priority to Japanese patent application serial number 11-96804 filed on April 2, 1999. An English translation of this document is included in the accompanying Information Disclosure Statement. At least Claims 53-84 are supported by the Japanese priority document. Accordingly, the date of invention for Claims 53-84 is moved to April 2, 1999, thereby predating the publication of the PCT Abeta

reference and the EP Abeta reference. Accordingly, the PCT Abeta reference and the EP Abeta reference do not qualify as prior art under 35 U.S.C. 102(a) either.

As for 35 U.S.C. 102(e), the EP Abeta reference cannot qualify since it is not a United States patent publication. The PCT Abeta reference might be considered to be a United States patent publication provided that certain facts can be established. However, the PCT Abeta reference would be disqualified as prior art under the provisions of 35 U.S.C. 103(c) since it was commonly owned by NTT DoCoMo, Inc. at the time of the invention of the present patent application.

Therefore, the PCT Abeta and EP Abeta references would not qualify as prior art with respect to Claims 53-84.

Since Abeta does not qualify as prior art, the 35 U.S.C. 103(a) rejection should be withdrawn. Furthermore, we have shown that the PCT Abeta and EP Abeta references would not ultimately qualify as prior art with respect to Claims 53-84. However, as will now be explained, the other rejected Claims 1, 2, 4, 6-8, 18, 20, 22, 23, 33-37, 47, 49, 51 are distinguishable over the PCT Abeta and EP Abeta references, even if they disclose identical content to Abeta for at least the following reasons.

1) Re: claims 1, 8, 21 and 47

In Claim 1 (as amended), pilot symbols "are time multiplexed at positions leaning in time to one side in respective slots of a control channel", and "weighting factors are determined according to said leaning positions". These amendments are supported, for example, in Figure 6 and on page 63 of the specification of the present application.

Claim 1 relates to a "parallel time multiplexing technique" (see Figure 1 of the present application), while Abeta relates to a "parallel multiplexing technique" (please see Figure 22 of

the present application). In the "parallel multiplexing technique", the problem in which pilot symbols are leaning in time to one side in a slot does not exist. Thus, Abeta does not disclose the above-mentioned feature of claim 1. As for Huang, Huang does not disclose that weighting factors are determined according to such leaning positions. Therefore, even if Abeta and Huang are combined, not all of the recited features of Claim 1 are taught by the combination. Thus, Claim 1 is not unpatentable over Abeta in view of Huang. The same thing can be said for claims 8, 21 and 47 (although claim 21 relates to "time multiplexing technique").

2) Re: claims 4, 18, 23 and 49

Claim 4 (as amended) generates weighting factors which are to be used for weighting and averaging pilot symbols and which vary from data symbol section to data symbol section in a slot. In contrast, although Abeta calculates a channel estimation value for each data symbol in a slot by using weighting factors, the same weighting factors are used for all the data symbols in a slot. Thus, Abeta does not disclose the above-mentioned feature of claim 4. Huang also does not disclose the above-mentioned feature of claim 4. Therefore, claim 4 is not unpatenable over Abeta in view of Huang. The same thing can be said for claims 18, 23 and 49.

3) Re: claims 6 and 35

Claim 6 decides fading frequency based on an inner product value of pilot symbols, and alters weighting factors that are used in taking weighted average according to the fading frequency. In page 6 of the current Office Action, the Examiner said that this feature of claim 6 was disclosed in Abeta by referring to column 1, lines 66-67 and column 2, lines 1-8 and 39-48 of Abeta. However, in these parts of Abeta, there is no description regarding calculation of an inner product value of pilot symbols. Thus, Abeta does not disclose the above-mentioned feature of claim 6. Huang also does not disclose the above-mentioned feature of claim 6. Therefore,

Claim 6 is not unpatentable over Abeta in view of Huang. The same thing can be said for claim 35.

4) Re: claims 7 and 36

In claim 7, a transmission rate of a data channel differs from a transmission rate of a control channel. In page 6 of the current Office Action, the Examiner said that this feature of claim 7 was disclosed in Abeta by referring to column 1, lines 55-61 of Abeta. However, this part of Abeta only discloses that power of a data symbol differs from power of a pilot symbol. Thus, Abeta does not disclose the above-mentioned feature of claim 7. Huang also does not disclose the above-mentioned feature of claim 7. Therefore, claim 7 is not unpatentable over Abeta in view of Huang. The same thing can be said for claim 36.

5) Re: claims 33, 37 and 51

Claim 33 (as amended) divides data symbols in a channel into a plurality of data symbol intervals each of which includes a plurality of data symbols, selects for each data symbol interval, pilot symbols suitable for calculation of a channel estimation value, generates for each data symbol interval, weighting factors for weighting and averaging the pilot symbols, and calculates a channel estimation value of data symbols during each data symbol interval. Since channel estimation value is collectively calculated for a plurality of data symbols (each data symbol interval includes a plurality of data symbols), the process can be simplified. Abeta does not disclose this feature of claim 33. Huang also does not disclose this feature of claim 33. Therefore, claim 33 is not unpatentable over Abeta in view of Huang. The same thing can be said for claims 37 and 51

6) Re: claims 2, 20, 22 and 34

As explained above, Claims 1, 18 and 33 are not unpatentable over Abeta in view of Huang. Since Claims 2, 20, 22 and 34 depend on Claims 1, 18, 18 and 33, respectively, Claims 2, 20, 22 and 34 are also not unpatentable over Abeta and Huang.

In the event that the Examiner finds remaining impediment to a prompt allowance of this application that may be clarified through a telephone interview, the Examiner is requested to contact the undersigned attorney.

Dated this 13th day of October, 2006.

Respectfully submitted,

/ADRIAN J. LEE/

Adrian J. Lee
Registration No. 42,785
Attorney for Applicants
Customer No. 022913

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